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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/015,307

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Franklin Zhigang Zhang

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11/15/2004

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EXAMINER

BUI, HUNG S

ART UNIT

PAPER NUMBER

2841

DATE MAILED: 11/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/015,307

Applicant(s)

ZHANG, FRANKLIN ZHIGANG

Examiner

Hung S. Bui

Art Unit

2841

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 7-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Objections*

1. Claims 7-10 are objected to because of the following informalities:

In claim 7, line 2, "board" should be corrected as --- boards --- and "comprises" should be corrected as --- comprising ---, in line 3, "plurality of on PCB shield zone" should be corrected as -- a plurality of PCB shield zones and ---, and in line 4, "housing cover" should be corrected as "housing covers."

In claim 8, line 1, "The on PCB shield zone of claim 7," should be corrected as --- The PCB shield zones ---, in line 2, "solder able" should be corrected as -- solderable -- and "zone" should be corrected as --- zones ---, and in line 3, "solder" should be corrected as --- soldered ---.

In claim 9, line 2, "solder" should be corrected as --- soldered --- and "solder able" should be corrected as --- solderable ---.

In claim 10, line 1, "An apparatus of conduct" should be corrected as --- an apparatus to conduct heat --- and "generate" should be corrected as --- generating ---, in line 3, "a on" should be corrected as --- a ---, in line 4, "a expansion" should be corrected as --- an expansion ---, "attached in to the connector/s" should be corrected as --- attached to connectors ---, and "the said on" should be corrected as --- said ---, in lines 5 and 10, "the said on" should be corrected as --- said ---, in line 8, "heat conduct" should be corrected as --- heat conducting ---, in line 10, "the said" should be corrected as --- said ---, in line 12, "Heat conduct means" should be corrected as --- heat conducting means ---, and in line 13, "cover" should be corrected as --- cover ---.

2. A substitute specification and claims in proper idiomatic English and in compliance with 37 CFR 1.52(a) and (b) is required. The substitute specification filed must be accompanied by a statement that it contains no new matter. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 10, in line 2, there is no antecedent basis for "the said expansion daughter board." In line 3, applicant should clarify the dependency of the claim. It is not clear whether applicant intends claim 10 to depend upon claim 7. In line 4, there is no antecedent basis for "the connector/s." In lines 8-11, the mounting of the heat conducting material relative to the "daughter and the said on PCB shield zone and the inside of the said metallic shield expansion housing cover" is unclear. It is unclear what applicant intends by the "plurality of heat conduct material mounted between and contact the daughter and the said on PCB shield zone and the inside of the said metallic shield expansion housing cover." In line 9, "the daughter and" should be corrected as -- the daughter board and --.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 7 is rejected under 35 U.S.C. 102(b) as being anticipated by Volz et al. [US 5,378,169].

Regarding claim 7, Volz et al. disclose a computer system board with a plurality of shield expansion housing apparatuses for add-on expansion daughter boards (figures 1-2) comprising a computer system motherboard (12) with plurality of shielding zones (figures 1-2) and a plurality of shield expansion housing covers (20).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Volz et al. [US 5,378,169] in view of Higgins, III [US 5,639,989].

Regarding claims 8-9, Volz et al. disclose at least one of the plurality of housing covers (12) being grounded on the at least one of the shielding expansion zones (64, figures 1-2).

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Volz et al. disclose the instant claimed invention except for the at least one of the housing covers being formed of shielding material and soldered onto the PCB at its solderable surrounding zone.

Higgins, III discloses a shield assembly having a copper shielding cover (72, 74, 76, figure 5) and being soldered at its solderable surrounding zone (56, figures 2) by means of solder (78).

It would have been obvious to a person having ordinary skill in the art at the time invention was made to use the metallic material for the cover of Volz et al. and solder the cover on the printed circuit board, as suggested by Higgins, III, for the purpose of protecting against EMI interference.

9. Claim 10, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Volz et al. in view of Higgins, III and Toy et al. [US 5,982,038].

Regarding claim 10, Volz et al. disclose an electronic apparatus (figures 1-2) comprising:

- at least one connector (30, 32) mounted on a printed circuit board (12, PCB, figures 1-2);
- at least one shielding zone on the PCB (figure 2);
- at least one expansion daughter board (14) attached into the connector within the at least one shield zone;
- at least one shield expansion housing cover (20) covered the expansion daughter board on the shielding zone of the PCB;

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Volz et al. disclose the instant claimed invention except for the shield expansion housing cover being soldered onto the shielding zone and a plurality of heat conduct material mounted between and contact "the daughter board and the shield zone" and the inside of the metallic shield expansion housing cover." and on a top of the metallic shield expansion housing cover.

Higgins, III discloses a shield assembly having a copper shielding cover (72, 74, 76, figure 5) and being soldered at its solder able shielding zone (56, figures 2).

It would have been obvious to a person having ordinary skill in the art at the time invention was made to solder the shield housing cover onto the printed circuit board of Volz et al., as suggested by Higgins, III, for the purpose of improving EMI protection.

Toy et al. disclose an electronic apparatus (figure 1) having a plurality of heat conduct material (28) mounted between components (16) and a shielding cover (20); between the shielding cover and a substrate (10) and on the top of the shielding cover (figure 1).

It would have been obvious to a person having ordinary skill in the art at the time invention was made to add heat conducting material in the electronic apparatus of Volz et al., as modified, as suggested by Toy et al., for the purpose of providing better heat dissipation from the daughter board.

### ***Response to Arguments***

10. Applicant's arguments filed 09-01-04 have been fully considered but they are not persuasive.

Applicant argues:

[1]: The shielding structure of Volz is sequentially connected necessitating an additional ground shield member.

[2]: The shield structure of Gessaman does not provide downward EMI protection.

[3]: There would have been no motivation to combine Volz and Gessaman.

[4]: Neither Volz or Gessaman create the direct mother board mounted EMI shield housing.

Regarding [1]: Applicant merely claims "a plurality of shield expansion housing covers." Applicant's claim does not preclude the sequential connection of Volz.

Regarding [2]: Applicant has not claimed, nor has examiner considered, the shield providing downward EMI protection.

Regarding [3]: In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, both Volz and Gessaman are directed providing shielding structures on printed circuit boards. A skilled artisan would have been to combine the beneficial shielding



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properties of the metal shielding enclosure and the stamping method used to fabricate the shield of Gessaman for the shield of Volz.

Regarding [4]: Applicant merely claims that the shield is mounted on a shield zone. Applicant has not claimed, nor has examiner considered, any specific direct mounting design not shown by the prior art.

### ***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung S. Bui whose telephone number is (571) 272-2102. The examiner can normally be reached on Monday-Friday 8:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (571) 272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

11/1/04  
HB



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